

Claims

I claim:

1           1. A wound irrigation device comprising a reservoir housing, containing a wound  
2 irrigation solution, and a discharge means, wherein said discharge means is removably  
3 attached to said reservoir housing, such that said discharge means directs a pressurized  
4 stream of said wound irrigation solution when said reservoir housing is pressurized.

1           2. The wound irrigation device according to claim 1, wherein said discharge means  
2 comprises a flat disc.

1           3. The wound irrigation device according to claim 2, wherein said flat disc comprises  
2 a plurality of ports.

1           4. The wound irrigation device according to claim 3, wherein said plurality of ports  
2 discharge a plurality of pressurized streams of the wound irrigation solution at an angle, such  
3 that said pressurized streams intersect over a center of said discharge means.

1           5. The wound irrigation device according to claim 3, wherein said discharge means  
2 comprises four ports.

1           6. The wound irrigation device according to claim 5, wherein each of said ports has  
2 a diameter of about 0.04 inches.

1           7. The wound irrigation device according to claim 3, wherein said reservoir housing  
2 comprises a threaded neck and an opening.

1           8. The wound irrigation device according to claim 7, wherein said flat disc is  
2 positioned over said opening.

1           9. The wound irrigation device according to claim 8, wherein said flat disc is affixed  
2 over said opening with a threaded end cap comprising a connection ring which engages said  
3 flat disc, such that said ports are uncovered.

1           10. The wound irrigation device according to claim 9, wherein said threaded end cap  
2 further comprises a removable protective membrane, wherein said protective membrane  
3 protects said ports and said wound irrigation solution from contamination.

1           11. The wound irrigation device according to claim 10, wherein said protective  
2 membrane comprises a pull tab, such that said protective membrane may be removed by  
3 pulling said pull tab.

1           12. The wound irrigation device according to claim 1, further comprising a splash  
2 guard.

1           13. The wound irrigation device according to claim 12, wherein said splash guard  
2 is hemi-spherical.

1           14. The wound irrigation device according to claim 13, wherein said splash guard  
2 comprises a removable protective cap.

1           15. The wound irrigation device according to claim 1, wherein said discharge means  
2 is an adjustable discharge means, whereby said adjustable discharge means permits  
3 adjustment of the rate of discharge of said irrigation solution.

1           16. The wound irrigation device according to claim 15, wherein said adjustable  
2 discharge means comprises a valve cap and a valve head, wherein said valve cap is

3 removably affixed to said reservoir housing and said valve head is threadably affixed to said  
4 valve cap.

1 17. The wound irrigation device according to claim 16, wherein said valve cap  
2 comprises an inner air inlet and an inner water outlet, wherein said inner water outlet  
3 substantially surrounds said inner air inlet.

1 18. The wound irrigation device according to claim 17, wherein said valve head  
2 comprises an outer air inlet and an outer water outlet, wherein said outer water outlet  
3 substantially surrounds said water air inlet.

1 19. The wound irrigation device according to claim 18, wherein said outer air inlet  
2 comprises a circular port.

1 20. The wound irrigation device according to claim 18, wherein said outer water  
2 outlet comprises a plurality of circular ports.

1 21. The wound irrigation device according to claim 18, wherein said inner air inlet  
2 and said outer air inlet combine to form an air inlet, and said inner water outlet and said outer  
3 water outlet combine to form a water outlet.

1 22. The wound irrigation device according to claim 21, further comprising an air  
2 hose, wherein said air hose comprises a proximal end and a distal end, wherein said proximal  
3 end of said air hose is affixed to said inner air outlet and said distal end of said air hose is  
4 located near a bottom inner surface of said reservoir housing.

1 23. The wound irrigation device according to claim 22, wherein said distal end of  
2 said air hose comprises a ball valve.

1           24. A method for irrigating a wound, said method comprising the following steps:

2           (a)     providing a sterile wound-irrigation solution in a compressible or pressurized  
3           reservoir housing having a discharge means comprising at least one port therethrough  
4           wherein said port forms a nozzle for directing a pressurized stream of said solution, and  
5           wherein the shape and configuration of said port, or ports, results in a dispersed stream of  
6           said solution;

7           (b)     directing the discharge means and reservoir housing so as to discharge the  
8           wound-irrigation solution toward said wound; and

9           (c)     discharging said wound-irrigation solution from said reservoir housing and  
10          through said port, or ports, to produce a dispersed stream of said wound-irrigation solution  
11          directed at said wound, wherein said dispersed stream is applied with sufficient force to  
12          dislodge contaminants, thereby effectively irrigating said wound.

1           25. The method, according to claim 24, wherein said wound-irrigation solution is  
2           discharged from said port, or ports, at a pressure between about 4 PSI and about 20 PSI.

1           26. The method, according to claim 24, wherein said discharge means has a plurality  
2           of ports.

1           27. The method, according to claim 24, wherein the diameter of said circular  
2           apertures is between that of a 10 gauge hypodermic needle and a 30 gauge hypodermic  
3           needle.

1           28. The method, according to claim 24, wherein the diameter of said circular  
2           apertures is between that of a 16 gauge hypodermic needle and a 25 gauge hypodermic  
3           needle.

1           29. The method, according to claim 24, wherein said ports are circular apertures with  
2           a diameter of less than about 1/8 inch.

1           30. The method, according to claim 24, wherein said circular apertures are conical  
2           in shape through said aperture.

1           31. The method, according to claim 24, wherein said discharge means comprises at  
2           least one elongated port.

1           32. The method, according to claim 24, wherein said discharge means is detachably  
2           engaged to said reservoir housing.

1           33. The method, according to claim 24, wherein said discharge means comprises a  
2           protective shield.

1           34. The method, according to claim 31, wherein said protective shield is detachable.